

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: RONALD W. KORZUN ET AL.)
Serial No: 10/708,909) Group Art Unit: 3745
Filed: March 31, 2004)
For: INTEGRAL COVERED NOZZLE) Examiner: Edgar, Richard A.
 WITH ATTACHED OVERCOVER) Confirmation No. 2908
)

REPLY BRIEF

This Reply Brief is submitted in response to the Examiner's Answer of June 26, 2007. Appellants respectfully request that these arguments be considered along with those provided in the Appeal Brief dated May 21, 2007.

Regarding to claims 1-3 and 10-12 (and all claims that depend respectively therefrom), Appellant respectfully disagree with the Examiner's 103 rejection based on the proposed combination of Ortolano '221 and Pickering. In addition, regarding to claims 1-4 and 10-13 (and all claims that depend respectively therefrom), Appellant respectfully disagree with the Examiner's 103 rejection based on the proposed combination of Ortolano '368, Pickering, and Mosser.

Referring to Issue I, Applicant points out that there is nothing taught or suggested in Pickering or Ortolano '221 that would support the Examiner's assertion that "each of the blades and vanes, since they are serially arranged in a common flow path, are subjected to nearly identical vibrational forces due to the turbulence of the airflow." (page 5 line 20 through page 6 line 2 of the Examiner's Answer). Applicant respectfully notes that not only are the vanes and blades of a turbine subject to different forces, but also a vane and blade of a first stage of the turbine is subject to different forces than a vane and blade of a later stage in the turbine. As such, the Examiner's assumption that *each* blade and vane is subject to the same forces is indicative of the Examiner's lack of

understanding of how the different flow dynamics (and thus forces) present in a turbine act on the different components of the turbine.

In addition, Applicant again submits MPEP 2143.01 section I, which states that, "there are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art," *In re Rouffet*, 149 F.3d 1350. As was mentioned above, an overcover of a nozzle blade would be subject to different forces than those that act upon a rotor blade (fighting of inward growth as opposed to fighting of outward growth). Ortolano '221 teaches an overcover for rotor blades that is inherently designed to solve the problem of outward growth of the blades. Pickering teaches stator nozzles that are inherently subject to the stresses of inward growth. As such, the nature of the problem to be solved in Pickering would be to fight nozzle inward growth, while the nature of the problem to be solved in Ortolano '221 is the fighting of outward growth. Thus, the nature of the problem to be solved in each reference is different.

Since there is also no explicit or implicit teaching in the prior art that would suggest combination of Ortolano '221 and Pickering, and, being that these references involve different components designed for different tasks in a turbine, there is no objective reason for persons of ordinary skill in the art to combine the references (the objective reason being required by *In re Mills*, 916 F.2d 680). Therefore, Applicant respectfully submits that a combination of Ortolano '221 and Pickering is not supported by any of the three sources discussed above.

Furthermore, since Ortolano '368 only teaches an overcover for a rotor blade (Ortolano '368 suggests nothing more of stator nozzle blades than does Ortolano '221), and Mosser only teaches a connecting cover (tie bands) for a rotor blade, Applicant respectfully submits that for the same reasons as discussed above, there is no suggestion found in Ortolano '368, Mosser, Pickering or the knowledge available to one of ordinary skill in the art to combine Ortolano '368 and Mosser with Pickering to teach a cover that is "configured to span tips of multiple adjacent nozzle blades."

Referring to Issue II, Applicant respectfully traverses the Examiner's assertion that "there is little difference between a vane and a blade for a turbine" (page 8, lines 1-2 of the Examiner's Answer). In fact the Examiner himself rebuts this assertion when he states that "...a vane is most likely less efficient than a blade when used in a rotor disc, and similarly, a blade is most likely less efficient than a vane when used in a casing part as a flow directing element. The structural difference is most notably the curvature..." (page 8, lines 6-9). Applicant respectfully agrees with the Examiner's statement that a vane and a blade include "structural differences." These differences are well-known in the art to be necessary to efficient turbine operation because a vane is a relatively stationary "flow directing element" of a stator, and a blade is a flow actuating, rotating component of a "rotor disc." As such, there are clearly differences between a vane (nozzle) and blade, and the Examiner himself actually contradicts his initial assertion that "there is little difference between a vane and a blade for a turbine."

The Examiner goes on to state that "The only structural difference between a vane and blade for a turbine as applied to the pending claims is the use of the word "nozzle"" (page 8, lines 9-10 of the Examiner's Answer). Applicant respectfully points out that claims 1 and 10 (and claims 2-9 and 11-19 that depend respectively therefrom) recite a nozzle blade that is "supported by a turbine stator." As mentioned above, efficient function of a turbine requires a nozzle/vane to be affixed to a stator, and a blade to be affixed to a rotor. Thus, Applicant clearly differentiates between a blade and a nozzle/vane in the claims by reciting a nozzle that is "supported by a turbine stator." Though the Examiner does not expressly refer to this "supported by a turbine stator" element of Applicant's claims, the Examiner seems to rely on his statement that "blades can be used in stators" (page 8, line 19) to overcome this recitation. However, Applicant again asserts that there are well-known structural differences in the art between a nozzle and blade (i.e. curvature), and these differences would render a turbine insufficiently operable if a nozzle were to be replaced on a stator by a blade. As is discussed above, the Examiner contradicts himself, and essentially concurs with this assertion of structural differences at page 8, lines 6-9 of the Answer.

For the reasons cited above, Appellants respectfully submit that the rejections are improper and request reversal of the outstanding rejections. If there are any additional charges with respect to this Appeal or otherwise, or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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